



ATTORNEY'S DOCKET NUMBER: 2003320-0032

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Jarrell, Kevin A., *et al.*
Serial No.: 09/910,354
Filed: July 20, 2001
For: MODULAR VECTOR SYSTEMS

Examiner: Vogel, Nancy
Group Art Unit: 1636

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

STATEMENT UNDER 37 CFR § 1.821

Applicant encloses herewith a paper copy and a computer-readable diskette copy of the Sequence Listing required under 37 C.F.R. § 1.821 - § 1.825 for the above-referenced patent application. Applicant also encloses a copy of the Raw Sequence Listing Error Report mailed August 25, 2004.

The undersigned states that the content of the paper copy of the Sequence Listing is identical to the information contained in the computer-readable diskette copy.

Please charge any fees that may be required or credit any overpayments to our Deposit Account No. 03-1721.

Respectfully submitted,

Valarie B. Rosen

Registration Number: 45,698

CHOATE, HALL & STEWART, LLP

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Boston, MA 02109
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Dated: Feb 25, 2005

3700833

Certificate of Mailing

I certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

2-25-05

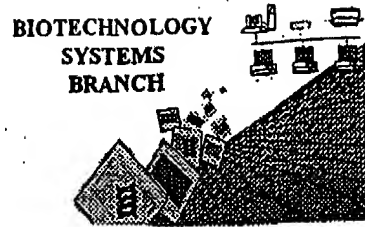
Date

Signature

Cathy A. O'Brien

Typed or Printed Name of person signing certificate

BEST AVAILABLE COPY



RAW SEQUENCE LISTING **ERROR REPORT**

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) detected errors when processing the following computer readable form:

Application Serial Number: 09/910,354
Source: FEW16
Date Processed by STIC: 5/28/04

THE ATTACHED PRINTOUT EXPLAINS DETECTED ERRORS.

PLEASE FORWARD THIS INFORMATION TO THE APPLICANT BY EITHER:

- 1) INCLUDING A COPY OF THIS PRINTOUT IN YOUR NEXT COMMUNICATION TO THE APPLICANT, WITH A NOTICE TO COMPLY or,
- 2) TELEPHONING APPLICANT AND FAXING A COPY OF THIS PRINTOUT, WITH A NOTICE TO COMPLY

FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221

TO REDUCE ERRORED SEQUENCE LISTINGS, PLEASE USE THE CHECKER

VERSION 4.2 PROGRAM, ACCESSIBLE THROUGH THE U.S. PATENT AND TRADEMARK OFFICE WEBSITE. SEE BELOW FOR ADDRESS:

<http://www.uspto.gov/web/offices/pac/checker/chknote.htm>

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail.

Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom.

Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

1. EFS-Bio (<http://www.uspto.gov/efb/efs/downloads/documents.htm>) , EFS Submission User Manual - ePAVE)
2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
3. Hand Carry, Federal Express, United Parcel Service, or other delivery service (EFFECTIVE 06/05/04):
U.S. Patent and Trademark Office, 220 20th Street S., Customer Window, Mail Stop Sequence, Crystal Plaza Two, Lobby, Room 1B03, Arlington, VA 22202

Revised 05/17/04



Raw Sequence Listing Error Summary

ERROR DETECTED

SUGGESTED CORRECTION

SERIAL NUMBER:

091910354

ATTN: NEW RULES CASES: PLEASE DISREGARD ENGLISH "ALPHA" HEADERS, WHICH WERE INSERTED BY PTO SOFTWARE

- 1 Wrapped Nucleics
Wrapped Aminos The number/text at the end of each line "wrapped" down to the next line. This may occur if your file was retrieved in a word processor after creating it. Please adjust your right margin to .3; this will prevent "wrapping."
- 2 Invalid Line Length The rules require that a line not exceed 72 characters in length. This includes white spaces.
- 3 Misaligned Amino
Numbering The numbering under each 5th amino acid is misaligned. Do not use tab codes between numbers; use space characters, instead.
- 4 Non-ASCII The submitted file was not saved in ASCII(DOS) text, as required by the Sequence Rules. Please ensure your subsequent submission is saved in ASCII text.
- 5 Variable Length Sequence(s) contain n's or Xaa's representing more than one residue. Per Sequence Rules, each n or Xaa can only represent a single residue. Please present the maximum number of each residue having variable length and indicate in the <220>-<223> section that some may be missing.
- 6 PatentIn 2.0
"bug" A "bug" in PatentIn version 2.0 has caused the <220>-<223> section to be missing from amino acid sequences(s). Normally, PatentIn would automatically generate this section from the previously coded nucleic acid sequence. Please manually copy the relevant <220>-<223> section to the subsequent amino acid sequence. This applies to the mandatory <220>-<223> sections for Artificial or Unknown sequences.
- 7 Skipped Sequences
(OLD RULES) Sequence(s) missing. If intentional, please insert the following lines for each skipped sequence:
(2) INFORMATION FOR SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
(i) SEQUENCE CHARACTERISTICS: (Do not insert any subheadings under this heading)
(ii) SEQUENCE DESCRIPTION: SEQ ID NO:X: (insert SEQ ID NO where "X" is shown)
This sequence is intentionally skipped.

Please also adjust the "(ii) NUMBER OF SEQUENCES:" response to include the skipped sequences.
- 8 Skipped Sequences
(NEW RULES) Sequence(s) missing. If intentional, please insert the following lines for each skipped sequence:
<210> sequence id number
<400> sequence id number
000
- 9 Use of n's or Xaa's
(NEW RULES) Use of n's and/or Xaa's have been detected in the Sequence Listing.
Per 1.823 of Sequence Rules, use of <220>-<223> is MANDATORY if n's or Xaa's are present.
In <220> to <223> section, please explain location of n or Xaa, and which residue n or Xaa represents.
- 10 Invalid <213>
Response Per 1.823 of Sequence Rules, the only valid <213> responses are: Unknown, Artificial Sequence, or scientific name (Genus/species). <220>-<223> section is required when <213> response is Unknown or is Artificial Sequence.
- 11 Use of <220> Sequence(s) missing the <220> "Feature" and associated numeric identifiers and responses.
Use of <220> to <223> is MANDATORY if <213> "Organism" response is "Artificial Sequence" or "Unknown." Please explain source of genetic material in <220> to <223> section.
(See "Federal Register," 06/01/1998, Vol. 63, No. 104, pp. 29631-32) (Sec. 1.823 of Sequence Rules)
- 12 PatentIn 2.0
"bug" Please do not use "Copy to Disk" function of PatentIn version 2.0. This causes a corrupted file, resulting in missing mandatory numeric identifiers and responses (as indicated on raw sequence listing). Instead, please use "File Manager" or any other manual means to copy file to floppy disk.
- 13 Misuse of n/Xaa "n" can only represent a single nucleotide; "Xaa" can only represent a single amino acid



IFW16

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/910,354

DATE: 05/28/2004
TIME: 13:27:24

Input Set : A:\PTO.YF.txt

Output Set: N:\CRF4\05282004\I910354.raw

3 <110> APPLICANT: Jarrell, et al., Kevin
5 <120> TITLE OF INVENTION: Modular Vector Systems
7 <130> FILE REFERENCE: 2003320-0032
9 <140> CURRENT APPLICATION NUMBER: 09/910,354
10 <141> CURRENT FILING DATE: 2001-07-20
12 <160> NUMBER OF SEQ ID NOS: 24
14 <170> SOFTWARE: PatentIn version 3.2
16 <210> SEQ ID NO: 1
17 <211> LENGTH: 23
18 <212> TYPE: DNA
19 <213> ORGANISM: PCR primer EU-1 for amplification of a vector fragment containing
W--> 20 bacterial origin of replication, Lac I gene, and pT7 promoter.
22 <400> SEQUENCE: 1
23 cauggtatat ctccttctta aag
26 <210> SEQ ID NO: 2
27 <211> LENGTH: 22
28 <212> TYPE: DNA
29 <213> ORGANISM: PCR primer Eu-2 for amplification of a vector fragment containing
W--> 30 bacterial origin of replication, Lac I gene, and pT7 promoter.
32 <400> SEQUENCE: 2
33 cucatgacca aaatccctta ac
36 <210> SEQ ID NO: 3
37 <211> LENGTH: 22
38 <212> TYPE: DNA
39 <213> ORGANISM: PCR primer EU-3 for amplification of a vector fragment containing Amp
W--> 40 gene.
42 <400> SEQUENCE: 3
43 gagattatca aaaaggatct tc
46 <210> SEQ ID NO: 4
47 <211> LENGTH: 20
48 <212> TYPE: DNA
49 <213> ORGANISM: PCR primer EU-4 for amplification of a vector fragment containing Amp
W--> 50 gene.
52 <400> SEQUENCE: 4
53 uaactagcat aacccttgg
56 <210> SEQ ID NO: 5
57 <211> LENGTH: 21
58 <212> TYPE: DNA
59 <213> ORGANISM: PCR primer 5' Lac Z for amplification of an insert fragment containing
W--> 60 Lac Z gene.
62 <400> SEQUENCE: 5
63 augaccatga ttacgccaac g
66 <210> SEQ ID NO: 6

Handwritten notes:
- "pls see item #10 on error summary sheet."
- "Does Not Comply Corrected Diskette Needed (Pg. 1-4)"
- "pls move this response to line 203"
- "mandatory, <213> response has to be either artificial/unknown or Genus/species."
- "Invalid <213> Response"
- "SAME ERROR" (repeated for entries 22, 20, and 21)

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/910,354

DATE: 05/28/2004

TIME: 13:27:24

Input Set : A:\PTO.YF.txt

Output Set: N:\CRF4\05282004\I910354.raw

✓ SAME
ERRORS

```

67 <211> LENGTH: 22
68 <212> TYPE: DNA
69 <213> ORGANISM: PCR primer 3' Lac Z for amplification of an insert fragment containing
v--> 70 Lac Z gene.
72 <400> SEQUENCE: 6
73 uuacaatttc cattcgccat tc 22
76 <210> SEQ ID NO: 7
77 <211> LENGTH: 37
78 <212> TYPE: DNA
79 <213> ORGANISM: PCR primer 5' OST for amplifying an Ori fragment from pET 19 b.
81 <400> SEQUENCE: 7
82 ctgctaagtg agcucgacag atcgctgaga taggtgc 37
85 <210> SEQ ID NO: 8
86 <211> LENGTH: 36
87 <212> TYPE: DNA
88 <213> ORGANISM: PCR primer 1N 3' Ori(s) for amplifying an Ori fragment from pET 19b.
90 <400> SEQUENCE: 8
91 aagcttgcta agtagggcgt tttccatag gctccg 36
94 <210> SEQ ID NO: 9
95 <211> LENGTH: 36
96 <212> TYPE: DNA
97 <213> ORGANISM: PCR primer 1NT5' KAN for amplifying a fragment containing the kanamycin
v--> 98 resistance gene from pCR2.1 topo.
100 <400> SEQUENCE: 9
101 ctacctagca agctuctatc tggacaaggg aaaacg 36
104 <210> SEQ ID NO: 10
105 <211> LENGTH: 41
106 <212> TYPE: DNA
107 <213> ORGANISM: PCR primer T73' KAN for amplifying a fragment containing the
kanamycin
v--> 108 resistance gene from pCR2.1 topo.
110 <400> SEQUENCE: 10
111 ccctatagtg agtcgtatta aggcgaaaac tctcaaggat c 41
114 <210> SEQ ID NO: 11
115 <211> LENGTH: 42
116 <212> TYPE: DNA
117 <213> ORGANISM: PCR primer tcs1 for amplifying a fragment containing the luciferase
gene
v--> 118 From pG1 II basic.
120 <400> SEQUENCE: 11
121 ttaatacgac tcactatagg gatggaagac gccaaaaaca ta 42
124 <210> SEQ ID NO: 12
125 <211> LENGTH: 36
126 <212> TYPE: DNA
127 <213> ORGANISM: PCR primer tc58 for amplifying a fragment containing the luciferase
gene
v--> 128 From pG1 II basic.
130 <400> SEQUENCE: 12
131 gagctcactt agcagttaca atttggactt tccgcc 36
134 <210> SEQ ID NO: 13
135 <211> LENGTH: 36
136 <212> TYPE: DNA

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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/910,354

DATE: 05/28/2004
TIME: 13:27:24

*✓ SAME
errors*

Input Set : A:\PTO.YF.txt
Output Set: N:\CRF4\05282004\I910354.raw

```

137 <213> ORGANISM: PCR primer 1NT 5'KAN for amplifying a fragment containing the
anamycin
--> 138 resistance gene from PCR 2.1 topo.
140 <400> SEQUENCE: 13
141 ctacctagca agctuctatc tggacaaggg aaaacg 36
144 <210> SEQ ID NO: 14
145 <211> LENGTH: 33
146 <212> TYPE: DNA
147 <213> ORGANISM: PCR primer 1NT 3'KAN for amplifying a fragment containing the
anamycin
--> 148 resistance gene from PCR 2.1 topo.
150 <400> SEQUENCE: 14
151 gagctcactt agcaaggcga aaactctcaa gga 33
154 <210> SEQ ID NO: 15
155 <211> LENGTH: 37
156 <212> TYPE: DNA
157 <213> ORGANISM: PCR primer 1NT5' Ori for amplifying a fragment containing the Ori
rom
--> 158 pET 19b.
160 <400> SEQUENCE: 15
161 ttgctaagtg agcucgacag atcgctgaga taggtgc 37
164 <210> SEQ ID NO: 16
165 <211> LENGTH: 36
166 <212> TYPE: DNA
167 <213> ORGANISM: PCR primer 1N3' Ori(s) for amplifying a fragment containing the Ori
rom
--> 168 pET 19b
170 <400> SEQUENCE: 16
171 aagcttgcta agtagggcgt ttttccatag gctccg 36
174 <210> SEQ ID NO: 17
175 <211> LENGTH: 37
176 <212> TYPE: DNA
177 <213> ORGANISM: PCR primer 3nt 5'OST for amplifying an Ori fragment.
179 <400> SEQUENCE: 17
180 ctgctaagtg agcucgacag atcgctgaga taggtgc 37
183 <210> SEQ ID NO: 18
184 <211> LENGTH: 36
185 <212> TYPE: DNA
186 <213> ORGANISM: PCR primer 3nt 5'OST for amplifying an Ori fragment.
188 <400> SEQUENCE: 18
189 aagcttgcta gguaggctac gtcttgctgg cggttcg 36
192 <210> SEQ ID NO: 19
193 <211> LENGTH: 36
194 <212> TYPE: DNA
195 <213> ORGANISM: PCR primer 3nt 5'KHT for amplifying a KAN fragment
197 <400> SEQUENCE: 19
198 ctacctagca agcuctatc tggacaaggg aaaacg 36
201 <210> SEQ ID NO: 20
202 <211> LENGTH: 35
203 <212> TYPE: DNA
204 <213> ORGANISM: PCR primer 3nt 3'KST for amplifying an Ori(s) fragment.
206 <400> SEQUENCE: 20
207 gagctcactt agcaggcga aaactctcaa ggatc 35

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/910,354

DATE: 05/28/2004
TIME: 13:27:24

Input Set : A:\PTO.YF.txt
Output Set: N:\CRF4\05282004\I910354.raw

✓ SAME
ERRORS

210 <210> SEQ ID NO: 21
211 <211> LENGTH: 37
212 <212> TYPE: DNA
213 <213> ORGANISM: PCR primer 1NT 5'ORI for amplifying an Ori(s) fragment.
215 <400> SEQUENCE: 21
216 ttgctaagtg agctcgacag atcgctgaga taggtgc 37
219 <210> SEQ ID NO: 22
220 <211> LENGTH: 36
221 <212> TYPE: DNA
222 <213> ORGANISM: PCR primer 1NT3' Ori(s) for amplifying an Ori(s) fragment.
224 <400> SEQUENCE: 22
225 aagcttgcta ggtaggcggt tttccatag gctcgc 36
228 <210> SEQ ID NO: 23
229 <211> LENGTH: 36
230 <212> TYPE: DNA
231 <213> ORGANISM: PCR primer 1NT 5'KAN for amplifying an KAN fragment.
233 <400> SEQUENCE: 23
234 ctacctagca agctuctatc tggacaaggg aaaacg 36
237 <210> SEQ ID NO: 24
238 <211> LENGTH: 33
239 <212> TYPE: DNA
240 <213> ORGANISM: PCR primer 1NT3'KAN for amplifying an Ori(s).
242 <400> SEQUENCE: 24
243 gagtcactt agcaaggcga aaactetcaa gga 33

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/910,354

DATE: 05/28/2004
TIME: 13:27:25

Input Set : A:\PTO.YF.txt
Output Set: N:\CRF4\05282004\I910354.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:11; Line(s) 117

Seq#:12; Line(s) 127

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/910,354

DATE: 05/28/2004

TIME: 13:27:25

Input Set : A:\PTO.YF.txt

Output Set: N:\CRF4\05282004\I910354.raw

L:20 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:30 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:40 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:50 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:60 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:70 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:98 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:108 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:118 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:128 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:138 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:148 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:158 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:
 L:168 M:259 W: Allowed number of lines exceeded, <213> ORGANISM:

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